MB845

Socket 478 Pentium® 4
Industrial Motherboard

USER'S MANUAL

Version 1.0

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Introduction

Product Description

The Pentium® 4 industrial motherboard MB845 is based on the Intel® 845PE/845GV chipset. It packs the key features of the chipset, including 533MHz processor side bus and integrated LAN and graphics. The chipset includes Intel's new ICH4 I/O control hub that supports USB 2.0 with peak transfer rate of up to 480Mbps.

When used with the 845PE chipset, MB845 has an AGP slot on board but without integrated graphics. When used with the 845GV chipset, MB845V comes with integrated graphics supporting up to DVMT 64MB shared memory but does not have an AGP slot on board.*

The MB845 motherboard supports Pentium® 4 processors of up to 3.06GHz and comes with a 10/100Mb/s Ethernet controller. Two DDR slots on board support up to 2GB of DDR200/266/333 non-ECC DDR SDRAM modules. Hardware monitoring is available with the Winbond W83627HF chipset on board.

Other special features of the board include 256-level and watchdog timer. Measuring 244mm by 305mm, MB845 also has five PCI slots and is a powerful platform of choice for high performance applications.

**Note: MB845 uses the Intel® 845PE chipset and supports an AGP slot on board. MB845V uses the Intel® 845GV chipset with integrated graphics support but does not have an AGP slot on board.*

Checklist

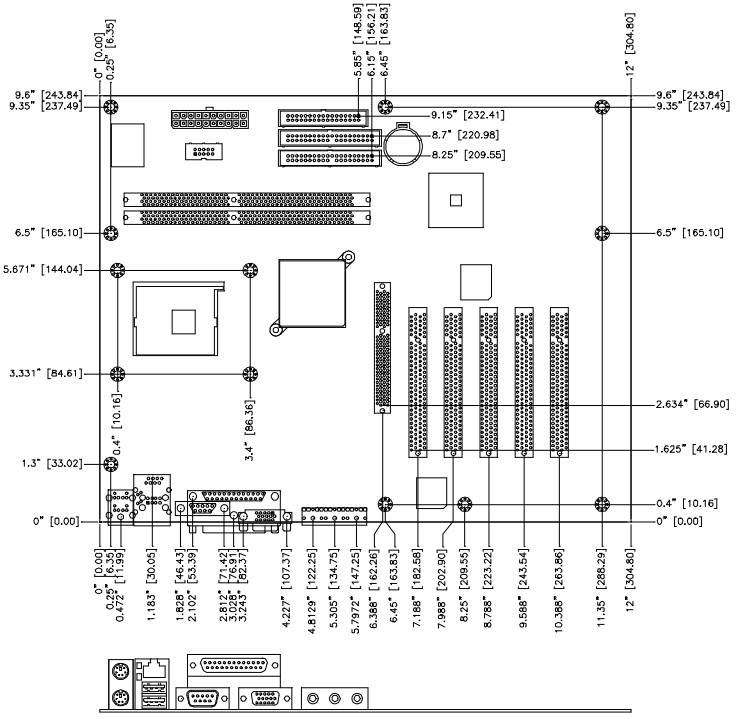
Your MB845 package should include the items listed below.

- The MB845 Industrial motherboard
- This User's Manual
- 1 IDE Ribbon Cable
- 1 Floppy Ribbon Cable
- 1 Bracket for 1 Serial Port
- I/O Shield Plate
- 1 CD containing the following:
  - Chipset Drivers
  - Flash Memory Utility

Specifications

CPU Socket	Socket 478
CPU	Intel® Pentium® 4, 1.70GHz ~ 3.06GHz+
CPU PSB (Processor Side Bus)	400MHz (100MHz x4), / 533MHz (133MHz x4)
Chipset	Intel® 845GV / Intel® 845PE
L2 Cache	128K/256K/512K, CPU integrated
BIOS	Award BIOS, ACPI supported
System Memory	Two DDR slots Support up to 2GB DDR200/266/333 non-ECC DDR SDRAM
Hyper Threading	Supported
Onboard VGA (for 845GV-based MB845V only)	Intel® 845GV chipset integrated, AGP 4X Supports CRT VGA interface CRT Monitor: up to 2048x1536 @60Hz
LAN	Realtek 8100BL, 10/100 BaseT
Audio	ICH4 integrated audio with AC97 Codec Audio connectors on board
LPC I/O	Winbond 83627HF supports IrDA x 1, Parallel x 1, COM1 (RS232), COM2 (RS232), FDC up to 2.88MB (3 Mode support), Hardware Monitor
IDE Interface	Built in ICH4; Two enhanced IDE supports 4 IDE devices including UDMA33/66/100, PIO mode 4 and bus master
FDD Interface	Supports up to two floppy disk drives: 3.5" and/or 5.25" drives; 3 Mode support
Parallel Port	One parallel port supports SPP/EPP/ECP
Serial Ports	Two RS-232 ports
Watchdog Timer	Generates system reset; 256 levels
H/W Monitoring	Built in Winbond W83627HF; monitors system/CPU temperature and voltage status
USB	USB 1.1 and 2.0 compliant Supports 4 USB ports
IrDA	Pin header
Keyboard / Mouse	PS/2 type keyboard and mouse connectors
PCI Slots	5 PCI slots
AGP Slot	Only supported by MB845 which has 845PE chipset
Power Connector	ATX 12V power connector (J10, J12 connectors)
Form Factor	ATX Motherboard
Dimensions	244mm x 305mm (9.6" x 12")

Board Dimensions



Installations

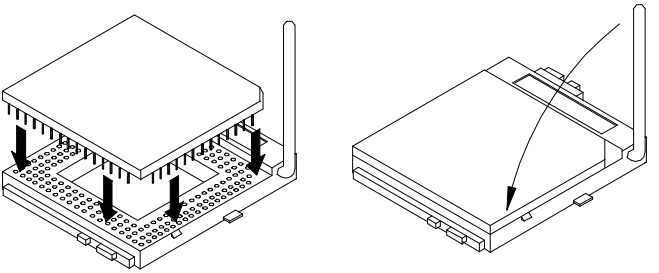
This section provides information on how to use the jumpers and connectors on the MB845 in order to set up a workable system. The topics covered are:

Installing the CPU
ATX Power Installation
Installing the Memory
Setting the Jumpers
Connectors on MB845
Watchdog Timer Configuration

Installing the CPU

The MB845 motherboard supports a Socket 478 processor socket for Intel® Pentium® 4 processors.

The Socket 478 processor socket comes with a lever to secure the processor. Raise this lever to about a 90° angle to allow the insertion of the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, return the lever to the lock position. Refer to the figures below.



After you have installed the processor into the socket, check if the jumpers for the CPU type and speed are correct.

NOTE: *Ensure that the CPU heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause your system to hang or be unstable.*

ATX Power Installation

Power is provided to the MB845 motherboard with the J10 standard ATX power supply connector and J12 ATX 12V power connector. These two power connectors should be utilized for the motherboard to function.

Installing the Memory

The MB845 motherboard supports two DDR memory sockets for a maximum total memory of 2GB in DDR memory type. The memory module capacities supported are 64MB, 128MB, 256MB, 512MB and 1GB. The following table lists the supported DDR DIMM configurations. Intel® 845PE/GV supports configurations defined in the JEDEC DDR DIMM specification only. Non-JEDEC standard DIMMs such as double-sided x16 DDR SDRAM DIMMs are not supported.

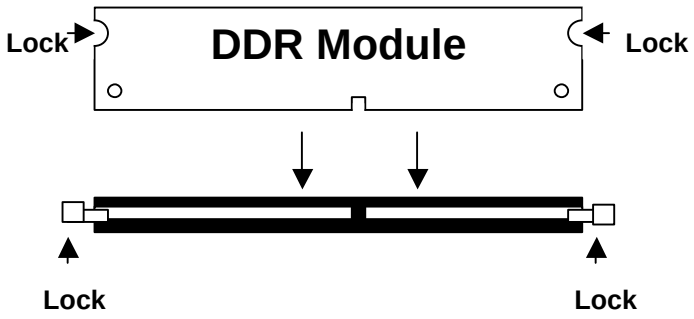
Supported DDR DIMM Configurations.

Density	64 Mbit		128Mbit		256Mbit		512Mbit	
Device Width	X8	X16	X8	X16	X8	X16	X8	X16
Single/ Double	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS
184-pin DDR	64/128MB	32MB/NA	128/256MB	64MB/NA	256/512MB	128MB/NA	512/1024M	256MB/NA

Installing and Removing Memory Modules

To install the DDR modules, locate the memory slot on the motherboard and perform the following steps:

1. Hold the DDR module so that the key of the DDR module align with those on the memory slot.
2. Gently push the DDR module in an upright position until the clips of the slot close to hold the DDR module in place when the DDR module touches the bottom of the slot.
3. To remove the DDR module, press the clips with both hands.



Setting the Jumpers

Jumpers are used on MB845 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on MB845 and their respective functions.

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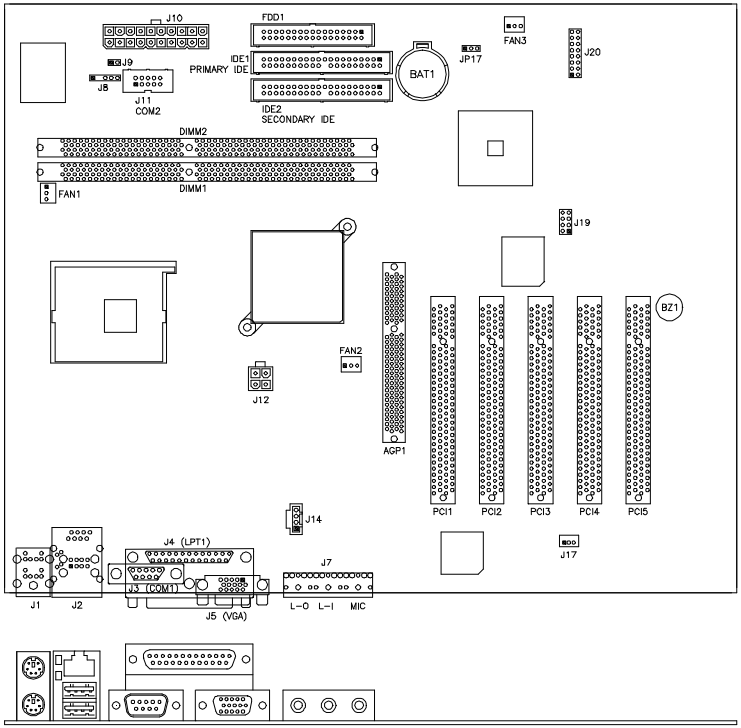
Jumper Locations on MB845



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Configuring the CPU Frequency

The MB845 motherboard does not provide DIP switches to configure the processor speed (CPU frequency). The CPU frequency and processor side bus of the processor can be automatically detected by the motherboard.

JP17: Clear CMOS Contents

Use JP17, a 3-pin header, to clear the CMOS contents. *Note that the ATX-power connector should be disconnected from the motherboard before clearing CMOS.*

JP17	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

Connectors on MB845

The connectors on MB845 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on MB845 and their respective functions.

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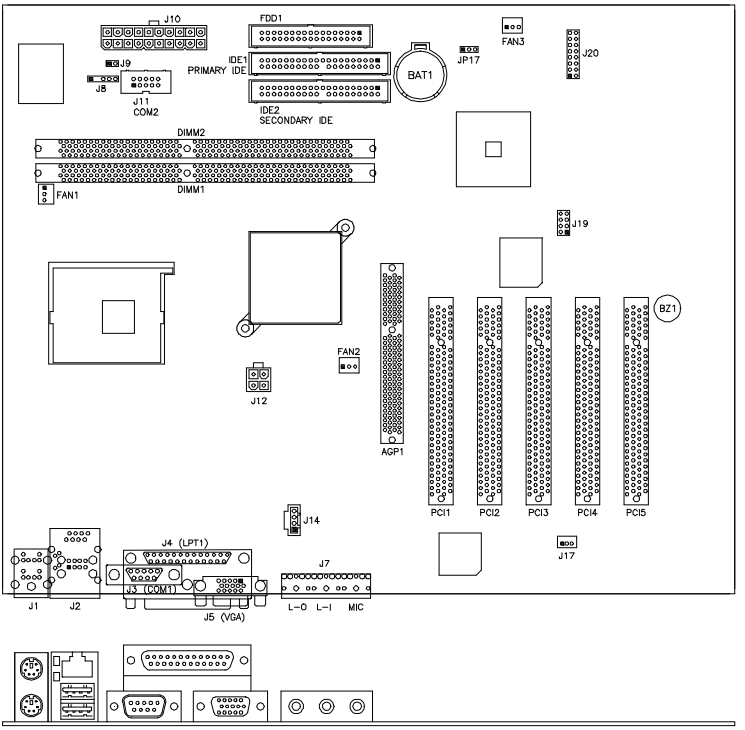
Connector Locations on MB845



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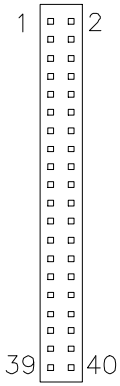
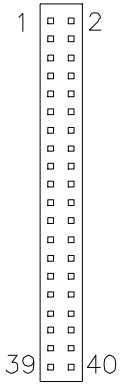
IDE1, IDE2: EIDE Connectors

IDE1: Primary IDE Connector



Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Protect pin
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

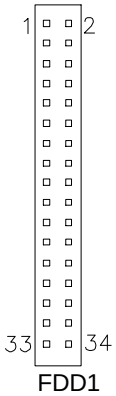
IDE2: Secondary IDE Connector



Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Protect pin
DRQ1	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK1	29	30	Ground
IRQ15	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

FDD1: Floppy Drive Connector

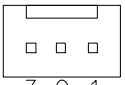
FDD1 is a 34-pin header and will support up to 2.88MB floppy drives.



Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	No connect
Ground	5	6	No connect
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00
Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

FAN1: CPU Fan Power Connector

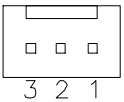
FAN1 is a 3-pin header for the CPU fan. The fan must be a 12V fan.



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

FAN2: System Fan Power Connector

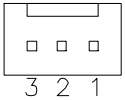
FAN2 is a 3-pin header for the system fan. The fan must be a 12V fan.



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

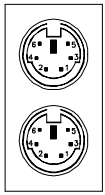
FAN3: Chassis Fan Power Connector

FAN3 is a 3-pin header for a 12V fan.



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J1: PS/2 Keyboard and PS/2 Mouse Connectors

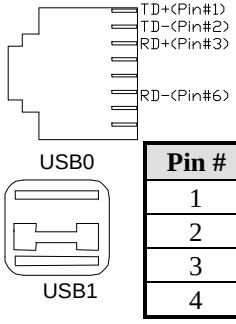


Below are the pin-out assignments of the connectors.

Signal Name	Keyboard	Mouse	Signal Name
Keyboard data	1	1	Mouse data
N.C.	2	2	N.C.
GND	3	3	GND
5V	4	4	5V
Keyboard clock	5	5	Mouse clock
N.C.	6	6	N.C.

J2: USB and LAN1 RJ45 Connectors

J2 consists of an RJ-45 connector (top) and two stacked USB ports. Refer to the section below for their respective pin assignments.

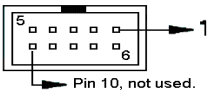


Pin #	Signal Name
1	Vcc
2	USB-
3	USB+
4	Ground

J3, J11: Serial Ports

J3 (COM1) is a DB-9 connector, while J11 (COM2) is a 10-pin header,. Refer to the table below for their pin assignments.

COM1

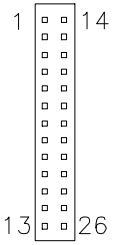


COM2

Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	6	DSR, Data set ready
RXD, Receive data	2	7	RTS, Request to send
TXD, Transmit data	3	8	CTS, Clear to send
DTR, Data terminal ready	4	9	RI, Ring indicator
GND, ground	5	10	Not Used

J4: Parallel Port Connector

The following table describes the pin out assignments of this connector.

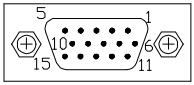


J4

Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	N/A	N/A

J5: VGA CRT Connector

The pin assignments of the J5 VGA CRT connector are as follows:

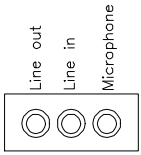


J5

Signal Name	Pin	Pin	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	N.C.
HSYNC	13	14	VSYNC
NC	15		

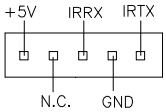
J7: Line Out, Line In, Mic Connector

The figure below shows the location of Line Out, Line In and Mic connectors on J7.



J8: IrDA Connector

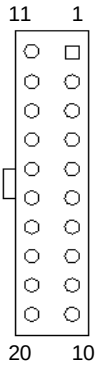
J8 is used for an optional IrDA connector for wireless communication.



Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

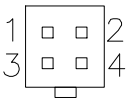
J10: ATX Power Supply Connector

J10 is a 20-pin ATX power supply connector. Refer to the following table for the pin out assignments.



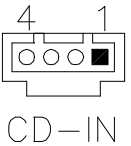
Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V

J12: ATX 12V Power Connector



Pin #	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

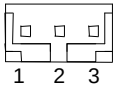
J14: CD-In Audio Connector



Pin #	Signal Name
1	CD Audio L
2	Ground
3	Ground
4	CD Audio R

J17: Wake on LAN Connector

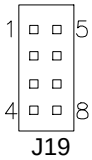
J17 is a 3-pin header for the Wake on LAN function that will function properly only with an ATX power supply with 5VSB that has 1A.



Pin #	Signal Name
1	+5VSB
2	Ground
3	Wake on LAN

J19: USB Connector

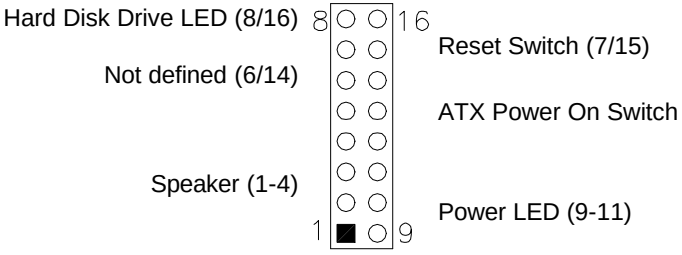
J19 connector will support the 3rd and 4th USB ports.



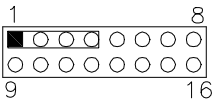
Signal Name	Pin	Pin	Signal Name
Vcc	1	5	Ground
USB2-	2	6	USB3+
USB2+	3	7	USB3-
Ground	4	8	Vcc

J20: System Function Connector

J20 provides connectors for system indicators that provide light indication of the computer activities and switches to change the computer status. J20 is a 16-pin header that provides interfaces for the following functions.

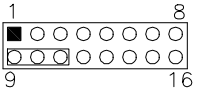


Speaker: Pins 1 - 4
This connector provides an interface to a speaker for audio tone generation. An 8-ohm speaker is recommended.



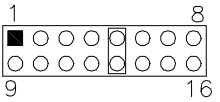
Pin #	Signal Name
1	Speaker out
2	No connect
3	Ground
4	+5V

Power LED: Pins 9 - 11
The power LED indicates the status of the main power switch.

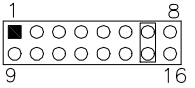


Pin #	Signal Name
9	Power LED
10	No connect
11	Ground

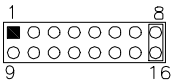
ATX Power ON Switch: Pins 5 and 13
This 2-pin connector is an "ATX Power Supply On/Off Switch" on the system that connects to the power switch on the case. When pressed, the power switch will force the system to power on. When pressed again, it will force the system to power off.



Reset Switch: Pins 7 and 15
The reset switch allows the user to reset the system without turning the main power switch off and then on again. Orientation is not required when making a connection to this header.



Hard Disk Drive LED Connector: Pins 8 and 16
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



Pin #	Signal Name
8	HDD Active
16	5V

Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sort of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

SAMPLE CODE:
This code and information is provided "as is" without warranty of any kind, either expressed or implied, including but not limited to the implied warranties of merchantability and/or fitness for a particular purpose.

```
;[]================================================
; Name  : Enable_And_Set_Watchdog
; IN    : AL - 1sec ~ 255sec
; OUT   : None
;[]================================================
Enable_And_Set_Watchdog   Proc    Near
        push    ax              ;save time interval
        call Unlock_Chip

        mov     cl, 2Bh
        call Read_Reg
        and     al, NOT 10h
        call Write_Reg          ;set GP24 as WDTO

        mov     cl, 07h
        mov     al, 08h
        call Write_Reg          ;switch to LD8

        mov     cl, 0F5h
        call Read_Reg
        and     al, NOT 08h
        call Write_Reg          ;set count mode as second
```

```
        pop ax
        mov     cl, 0F6h
        call Write_Reg      ;set watchdog timer

        mov     al, 01h
        mov     cl, 30h
        call Write_Reg      ;watchdog enabled

        call Lock_Chip
        ret
Enable_And_Set_Watchdog  Endp
;[]=============================================
; Name  : Disable_Watchdog
; IN    : None
; OUT   : None
;[]=============================================
Disable_Watchdog  Proc    Near
        call Unlock_Chip

        mov     cl, 07h
        mov     al, 08h
        call Write_Reg      ;switch to LD8

        xor  al, al
        mov     cl, 0F6h
        call Write_Reg      ;clear watchdog timer

        xor  al, al
        mov     cl, 30h
        call Write_Reg      ;watchdog disabled

        call Lock_Chip
        ret
Disable_Watchdog  Endp
;[]=============================================
; Name  : Unlock_Chip
; IN : None
; OUT   : None
```

```
;[]=============================================
Unlock_Chip     Proc    Near
          mov     dx, 2Eh
          mov     al, 87h
          out  dx, al
          out  dx, al
          ret
Unlock_Chip     Endp
;[]=============================================
; Name  : Lock_Chip
; IN : None
; OUT   : None
;[]=============================================
Unlock_Chip     Proc    Near
          mov     dx, 2Eh
          mov     al, 0AAh
          out  dx, al
          ret
Unlock_Chip     Endp
;[]=============================================
; Name  : Write_Reg
; IN : CL - register index
;      AL - Value to write
; OUT   : None
;[]=============================================
Write_Reg   Proc    Near
          push    ax
          mov     dx, 2Eh
          mov     al,cl
          out  dx,al
          pop ax
          inc  dx
          out  dx,al
          ret
Write_Reg   Endp
;[]=============================================
; Name  : Read_Reg
; IN : CL - register index
; OUT   : AL - Value to read
```

```
;[]================================================
Read_Reg    Proc      Near
            mov       al, cl
            mov       dx, 2Eh
            out  dx, al
            inc  dx
            in    al, dx
            ret
Read_Reg    Endp
;[]================================================
```

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BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the motherboard. The topics covered in this chapter are as follows:

BIOS Introduction 28
BIOS Setup 28
Standard CMOS Setup 30
Advanced BIOS Features 33
Advanced Chipset Features 36
Integrated Peripherals 38
Power Management Setup 41
PNP/PCI Configurations 44
PC Health Status 45
Frequency/Voltage Control 46
Load Fail-Safe Defaults 47
Load Setup Defaults 47
Set Supervisor/User Password 47
Save & Exit Setup 47
Exit Without Saving 47

BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel® Pentium® 4 processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

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Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load Fail-Safe Defaults
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type…	

The section below the setup items of the Main Menu displays the control keys for this menu. At the bottom of the Main Menu just below the control keys section, there is another section, which displays information on the currently highlighted item in the list.

***Note**: If the system cannot boot after making and saving system changes with Setup, the Award BIOS supports an override to the CMOS settings that resets your system to its default.*

***Warning:** It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

Standard CMOS Setup

"Standard CMOS Setup" choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

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Standard CMOS Features

Date (mm:dd:yy)	Tue, Mar 26 2001	Item Help
Time (hh:mm:ss)	00 : 00 : 00	Menu Level
IDE Primary Master	Press Enter 13020 MB	Change the day, month,
IDE Primary Slave	Press Enter None	Year and century
IDE Secondary Master	Press Enter None	
IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All, But Keyboard	
Base Memory	640K	
Extended Memory	129024K	
Total Memory	130048K	

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

The date format is:

Day : **Sun to Sat**
Month : **1 to 12**
Date : **1 to 31**
Year : **1994 to 2079**

To set the date, highlight the "Date" field and use the PageUp/ PageDown or +/- keys to set the current time.

Time

The time format is: **Hour : 00 to 23**
Minute : 00 to 59
Second : 00 to 59

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

IDE Primary HDDs / IDE Secondary HDDs

The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the "Master" and the second is the "Slave".

Press <Enter> to configure the hard disk. The selections include Auto, Manual, and None. Select 'Manual' to define the drive information manually. You will be asked to enter the following items.

CYLS :	Number of cylinders
HEAD :	Number of read/write heads
PRECOMP :	Write precompensation
LANDZ :	Landing zone
SECTOR :	Number of sectors

The Access Mode selections are as follows:

Auto	
Normal	(HD < 528MB)
Large	(for MS-DOS only)
LBA	(HD > 528MB and supports Logical Block Addressing)

Drive A / Drive B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.2MB	720KB	1.44MB	2.88MB
5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether or not the system will halt if an error is detected during power up.

No errors	The system boot will not be halted for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a keyboard or disk error; it will stop for all others.

Advanced BIOS Features

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

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Advanced BIOS Features

Virus Warning	**Disabled**	ITEM HELP
CPU L1 and L2 Cache	Enabled	Menu Level
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	Allows you choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot Device	HDD-0	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up Numlock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
Typematic Rate (chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Enabled	
MPS Version Control for OS	1.4	
OS Select For DRAM>64MB	Non-OS2	
Report No FDD For WIN 95	Yes	
Small Logo (EPA) Show	Enabled	

Virus Warning

This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

CPU L1 and L2 Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are ***Enabled***.

Quick Power On Self Test

When enabled, this field speeds up the Power On Self Test (POST) after the system is turned on. If it is set to *Enabled*, BIOS will skip some items.

First/Second/Third Boot Device

These fields determine the drive that the system searches first for an operating system. The options available include *Floppy*, *LS/ZIP*, *HDD-0*, *SCSI*, *CDROM*, *HDD-1*, *HDD-2*, *HDD-3*, *LAN* and *Disable*.

Boot Other Device

These fields allow the system to search for an operating system from other devices other than the ones selected in the First/Second/Third Boot Device.

Swap Floppy Drive

This item allows you to determine whether or not to enable Swap Floppy Drive. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to ***Disabled.***

Boot Up Floppy Seek

This feature controls whether the BIOS checks for a floppy drive while booting up. If it cannot detect one (either due to improper configuration or its absence), it will flash an error message.

Boot Up NumLock Status

This allows you to activate the NumLock function after you power up the system.

Gate A20 Option

This field allows you to select how Gate A20 is worked. Gate A20 is a device used to address memory above 1 MB.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to ***Disabled.***

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. Settings are from 6 to 30 characters per second.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to ***250msec.***

Security Option

This field allows you to limit access to the System and Setup. The default value is ***Setup***. When you select *System,* the system prompts for the User Password every time you boot up. When you select *Setup,* the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

APIC Mode

APIC stands for Advanced Programmable Interrupt Controller. The default setting is ***Enabled***.

MPS Version Control for OS

This option is specifies the MPS (Multiprocessor Specification) version for your operating system. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. The default setting is ***1.4***.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is ***Non-OS/2***.

Report No FDD For WIN 95

If you are using Windows 95/98 without a floppy disk drive, select Enabled to release IRQ6. This is required to pass Windows 95/98's SCT test. You should also disable the Onboard FDC Controller in the Integrated Peripherals screen when there's no floppy drive in the system. If you set this feature to Disabled, the BIOS will not report the missing floppy drive to Win95/98.

Small Logo (EPA) Show

The EPA logo appears at the right side of the monitor screen when the system is boot up. The default setting is ***Enabled***.

Advanced Chipset Features

This Setup menu controls the configuration of the chipset.

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Advanced Chipset Features

		ITEM HELP
DRAM Timing Selectable	By SPD	Menu Level
CAS Latency Time	2.5	
Active to Precharge Delay	6	
DRAM RAS# to CAS# Delay	3	
DRAM RAS# Precharge	3	
Memory Frequency For	Auto	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Enabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
Delay Prior to Thermal	16 Min	
AGP Aperture Size (MB)	64	
** On-Chip VGA Setting **		
On-Chip VGA	Enabled	
On-Chip Frame Buffer Size	8MB	

DRAM Timing Selectable

This option refers to the method by which the DRAM timing is selected. The default is ***By SPD***.

CAS Latency Time

You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The choices are 1.5, 2 and 2.5.

Active to Precharge Delay

The default setting for the Active to Precharge Delay is ***6***.

DRAM RAS# to CAS# Delay

This option allows you to insert a delay between the RAS (Row Address Strobe) and CAS (Column Address Strobe) signals. This delay occurs when the SDRAM is written to, read from or refreshed. Reducing the delay improves the performance of the SDRAM.

DRAM RAS# Precharge

This option sets the number of cycles required for the RAS to accumulate its charge before the SDRAM refreshes. The default setting for the Active to Precharge Delay is ***3***.

Memory Frequency For
This field sets the frequency of the DRAM memory installed. The default setting is ***Auto***.

System BIOS Cacheable
The setting of *Enabled* allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS Cacheable
The Setting *Enabled* allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Memory Hole at 15MB - 16MB
In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB of memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to ***Disabled***.

Delayed Transaction
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1.

Delay Prior to Thermal
This field activates the CPU thermal function after the systems boots for the set number of minutes. The options are *4*, *8*, *16* and *32*.

AGP Aperture Size
The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The default setting is ***64M***.

On-Chip VGA
By default, the On-Chip VGA or chipset-integrated VGA is ***Enabled***.

On-Chip Frame Buffer Size
The On-Chip Frame Buffer Size can be set us 1MB or 8MB. This memory is shared with the system memory.

Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals.

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Integrated Peripherals

On-Chip Primary PCI IDE	Enabled	ITEM HELP
IDE Primary Master PIO	Auto	Menu Level
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
On-Chip Secondary PCI IDE	Enabled	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB 2.0 Controller	Disabled	
USB Keyboard Support	Disabled	
AC97 Audio	Auto	
Init Display First	Onboard/AGP	
IDE HDD Block Mode	Enabled	
POWER ON Function	BUTTON Only	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
PWRON After PWR-Fail	Off	

OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA

These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

USB Controller

The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Enabled***.

USB 2.0 Controller

The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Disabled***. In order to use USB 2.0, necessary OS drivers must be installed first.

USB Keyboard Support

The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Disabled***.

AC97 Audio

The default setting of the AC97 Audio is ***Auto***.

Init Display First

This field allows the system to initialize first the VGA card on chip or the display on the PCI Slot. By default, the *PCI Slot* VGA is initialized first.

IDE HDD Block Mode

This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

Power On Function

This field sets how the system can be powered on from a system off state. The default setting is ***Button Only***.

Onboard FDC Controller

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the motherboard and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field. This option allows you to select the onboard FDD port.

Onboard Serial/Parallel Port

These fields allow you to select the onboard serial and parallel ports and their addresses. The default values for these ports are:

Serial Port 1	3F8H/IRQ4
Serial Port 2	2F8H/IRQ3
Parallel Port	378H/IRQ7

UART Mode Select

This field determines the UART 2 mode in your computer. The default value is ***Normal***. Other options include *IrDA* and *ASKIR*.

Parallel Port Mode

This field allows you to determine parallel port mode function.

SPP	Standard Printer Port
EPP	Enhanced Parallel Port
ECP	Extended Capabilities Port

PWRON After PWR-Fail

This field sets the system power status whether on or off when power returns from a power failure situation.

Power Management Setup

The Power Management Setup allows you to save energy of your system effectively.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Power Management Setup

ACPI Function	Enabled	ITEM HELP
Power Management	User Define	Menu Level
Video Off Method	V/H Sync+Blank	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
CPU THRM-Throttling	50%	
Wake-Up by PCI Card	Disabled	
Power On by Ring	Disabled	
Resume by Alarm	Disabled	
Date (of Month) Alarm	0	
Time (hh:mm:ss) Alarm	0 : 0 : 0	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ[A-D] #	Disabled	

ACPI Function

Enable this function to support ACPI (Advance Configuration and Power Interface).

Power Management

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

Min. Power Saving	Minimum power management
Max. Power Saving	Maximum power management.
User Define	Each of the ranges is from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank	Default setting, blank the screen and turn off vertical and horizontal scanning.
DPMS	Allows BIOS to control the video display.
Blank Screen	Writes blanks to the video buffer.

Video Off In Suspend

When enabled, the video is off in suspend mode. The default is ***Yes***.

Suspend Type

The default setting for the Suspend Type field is ***Stop Grant***.

Modem Use IRQ

This field sets the IRQ used by the Modem. By default, the setting is ***3***.

Suspend Mode

When enabled, and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWRBTN

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds.

CPU THRM-Throttling

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

Wake-Up by PCI Card

Enable this field to allow wake up function through a PCI card.

Power On by Ring

This field enables or disables the power on of the system through the modem connected to the serial port or LAN.

Resume by Alarm

This field enables or disables the resumption of the system operation. When enabled, the user is allowed to set the *Date* and *Time*.

Reload Global Timer Events

The HDD, FDD, COM, LPT Ports, and PCI PIRQ are I/O events which can prevent the system from entering a power saving mode or can awaken the system from such a mode. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

PNP/PCI Configurations

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
PnP/PCI Configurations

Reset Configuration Data	Disabled	ITEM HELP
		Menu Level
Resources Controlled By	Auto (ESCD)	
IRQ Resources	Press Enter	Default is Disabled.
DMA Resources	Press Enter	Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
PCI/VGA Palette Snoop	Disabled	

Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not. The default value is ***Disabled.***

Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices automatically with the use of a use a PnP operating system such as Windows 95.

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether or not MPEG ISA/VESA VGA cards can work with PCI/VGA. When this field is enabled, a PCI/VGA can work with an MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with an MPEG ISA/VESA card.

PC Health Status

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds and voltages.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
PC Health Status

		ITEM HELP
CPU Warning Temperature	Disabled	
System Temperature	28°C/82°F	
CPU Temperature	35°C/95°F	
Chassis Temperature	39°C/102°F	
CPU FAN Speed	4166 RPM	
System FAN Speed	0 RPM	
Chassis FAN Speed	0 RPM	
Vcore (V)	1.63V	
VCC3(V)	3.37V	
+5(V)	5.05V	
+12(V)	12.09V	
-12(V)	(-)12.03V	
VBAT	3.21V	
5VSB(V)	5.05V	
Shutdown Temperature	Disabled	
CPU Fan Failure Warning	Disabled	

CPU Warning Temperature

This field allows the user to set the temperature so that when the temperature is reached, the system sounds a warning. This function can help prevent damage to the system that is caused by overheating.

Temperatures/Fan Speeds/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

Shutdown Temperature

This field allows the user to set the temperature by which the system automatically shuts down once the threshold temperature is reached. This function can help prevent damage to the system that is caused by overheating.

Frequency/Voltage Control

This section shows the user how to configure the processor frequency.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Frequency/Voltage Control

CPU Clock Ratio	12X	ITEM HELP
Auto Detect PCI Clk	Disabled	Menu Level
Spread Spectrum Modulated	Disabled	

CPU Clock Ratio

The CPU Ratio, also known as the CPU bus speed multiplier, can be configured through this field. The default setting is ***12X***. This parameter can be used in conjunction with the above field to change the processor's speed.

Auto Detect PCI Clk

This field enables or disables the auto detection of the PCI clock.

Spread Spectrum

This field sets the value of the spread spectrum. The default setting is ***Disabled***. This field is for CE testing use only.

Load Fail-Safe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Set Supervisor/User Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Save & Exit Setup

This option allows you to determine whether or not to accept the modifications. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.

Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.

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Drivers Installation

This section describes the installation procedures for software and drivers under the Windows 98, Windows NT 4.0 and Windows 2000. The software and drivers are included with the motherboard. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

Intel® Chipset Software Installation Utility 50
Graphics Driver Installation (MB845V only)..... 53
Intel® Application Accelerator Installation..... 55
AC97 Codec Audio Driver Installation..... 57
LAN Drivers Installation 58

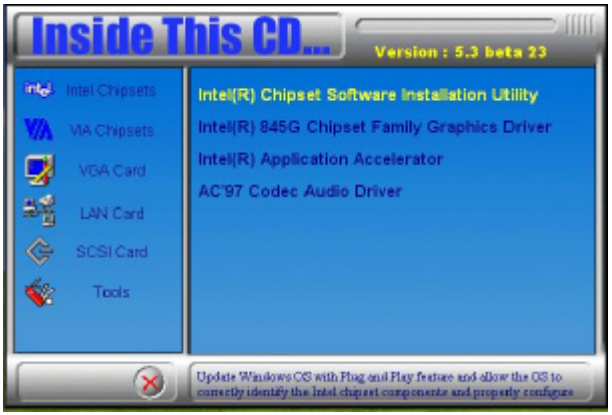
IMPORTANT NOTE:
After installing your Windows operating system (Windows 98SE/ME/2000/XP), you must install first the Intel® Chipset Software Installation Utility before proceeding with the drivers installation.

Intel® Chipset Software Installation Utility

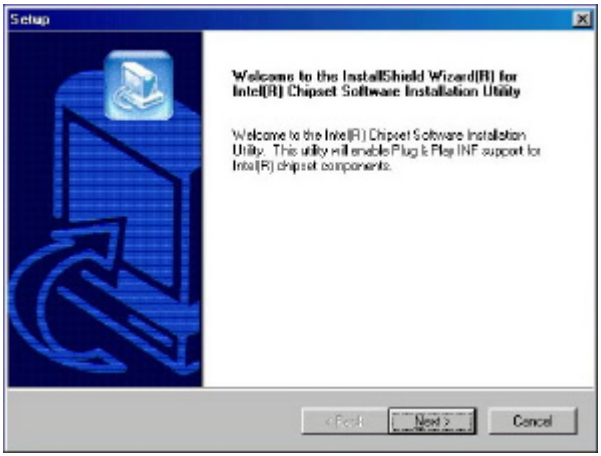
The Intel® Chipset Software Installation Utility, to be installed first before the software drivers, will enable Plug & Play INF support for Intel® chipset components. Follow the instructions below to complete the installation under Windows 98SE/ME/2000/XP.

1. Insert the CD that comes with the motherboard and the screen below would appear. Click Intel(R) Chipsets and then Intel(R) 845G/GE/GL/GV Chipset Drivers.

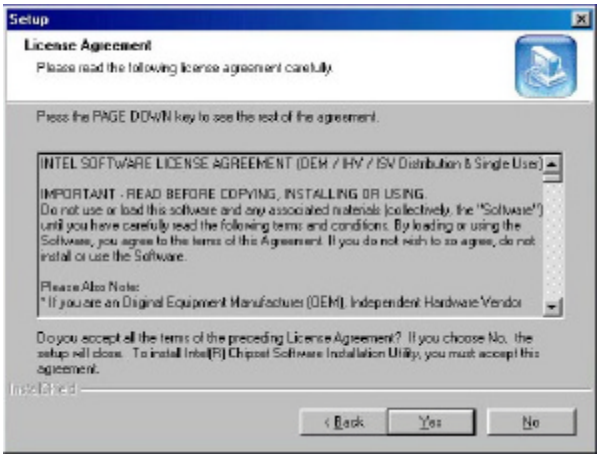
2. Click Intel(R) Chipset Software Installation Utility.


Inside This CD...
Version : 5.3 beta 23
Intel Chipsets
VIA Chipsets
VGA Card
LAN Card
SCSI Card
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) 845G Chipset Family Graphics Driver
Intel(R) Application Accelerator
AC'97 Codec Audio Driver
Update Windows OS with Plug and Play feature and allow the OS to correctly identify the Intel chipset components and properly configure

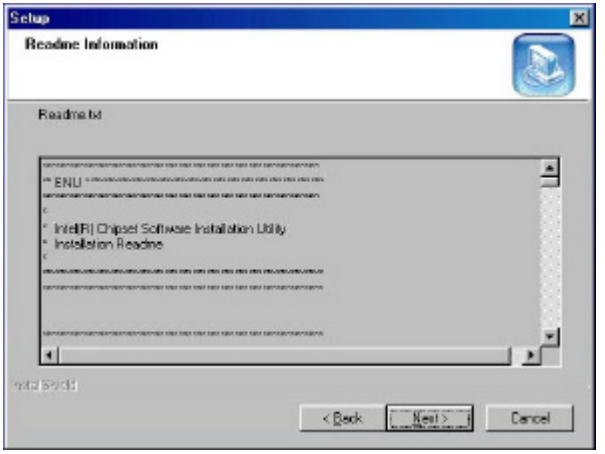
3. When the Welcome screen appears, click Next to continue.


Setup
Welcome to the InstallShield Wizard(R) for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

4. Click Yes to accept the software license agreement and proceed with the installation process.


Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Intel(R) Chipset Software Installation Utility, you must accept this agreement.
InstallShield
< Back
Yes
No

5. On Readme Information screen, click Next to continue the installation.



6. The Setup process is now complete. Click Finish to restart the computer and for changes to take effect. When the computer has restarted, the system will be able to find some devices. Restart your computer when prompted.

Setup
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Chipset Software Installation Utility. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
Finish

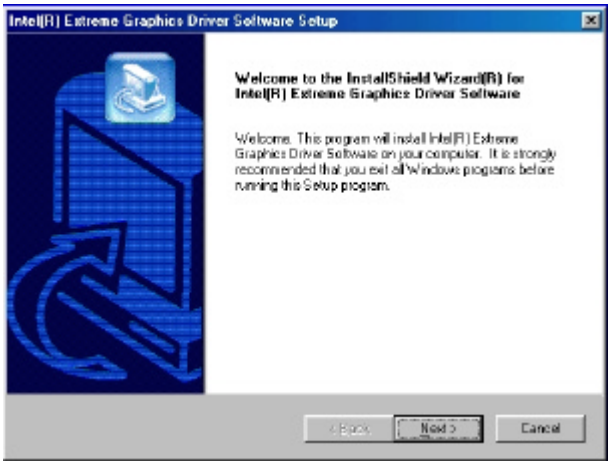
Graphics Driver Installation (MB845V only)

Follow the steps below to install the Intel® 845GE graphics driver under Windows 98SE/ME/2000/XP/NT 4.0.

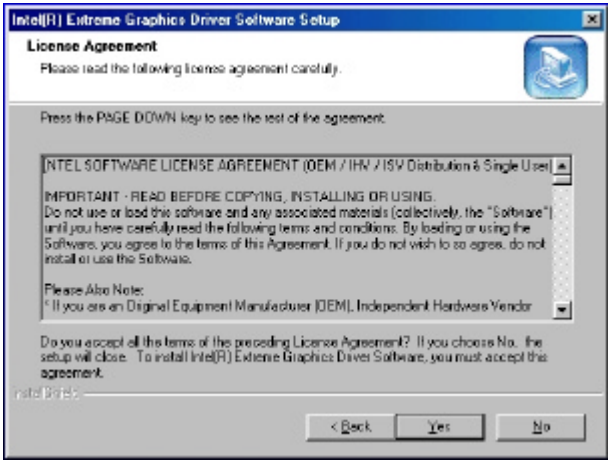
1. Insert the CD that comes with the motherboard. Click Intel(R) Chipsets on the left side of the screen. Then select Intel(R) 845GE/GL/GV Chipset Drivers. Then select Intel(R) 845G Chipset Family Graphics Driver.

Inside This CD...
Version : 5.3 beta 23
Intel Chipsets
VIA Chipsets
VGA Card
LAN Card
SCSI Card
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) 845G Chipset Family Graphics Driver
Intel(R) Application Accelerator
AC'97 Codec Audio Driver
Update Windows OS with Plug and Play feature and allow the OS to correctly identify the Intel chipset components and properly configure

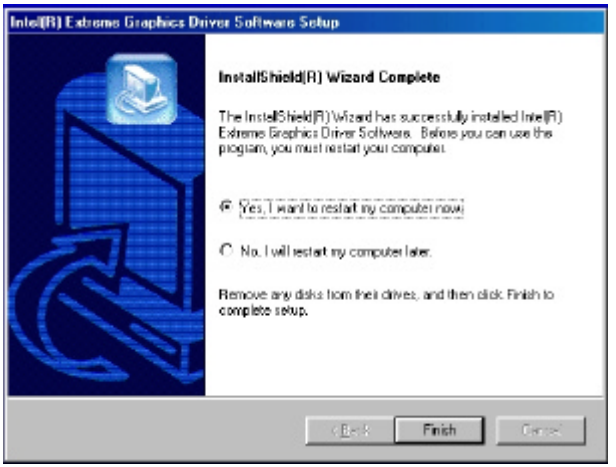
2. When the Welcome screen appears, click Next to continue.


Intel(R) Extreme Graphics Driver Software Setup
Welcome to the InstallShield Wizard(R) for Intel(R) Extreme Graphics Driver Software
Welcome. This program will install Intel(R) Extreme Graphics Driver Software on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
< Back
Next >
Cancel

3. Click Yes to accept the software license agreement and proceed with the installation process.


Intel(R) Extreme Graphics Driver Software Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Intel(R) Extreme Graphics Driver Software, you must accept this agreement.
< Back
Yes
No

4. The Setup process is now complete. Click Finish to restart the computer and for changes to take effect. Restart your computer when prompted.


Intel(R) Extreme Graphics Driver Software Setup
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Extreme Graphics Driver Software. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
Finish

Intel® Application Accelerator Installation

Follow the steps below to install Intel® Application Accelerator software with the InstallShield Wizard under Windows 98SE/ME/2000/XP/ NT 4.0.

1. Insert the CD that comes with the motherboard and the screen below would appear. Click Intel(R) Chipsets and then Intel(R) 845G/GE/GL/GV Chipset Drivers.

2. Click Intel(R) Application Accelerator.

Inside This CD...
Version : 5.3 beta 23
Intel Chipsets
VIA Chipsets
VGA Card
LAN Card
SCSI Card
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) 845G Chipset Family Graphics Driver
Intel(R) Application Accelerator
AC'97 Codec Audio Driver
Update Windows OS with Plug and Play feature and allow the OS to correctly identify the Intel chipset components and properly configure

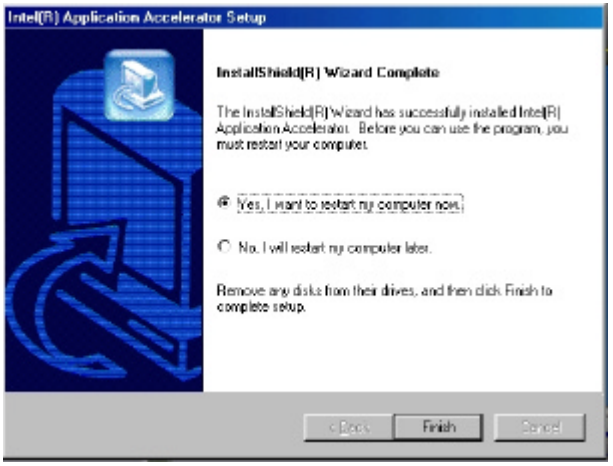
3. The Welcome screen of the Install Shield Wizard for Intel® Application Accelerator.

4. Click Yes to accept the software license agreement and proceed with the installation process.

5. You are now required to select the folder where Setup will install files. Click Next to accept the default folder or click Browse to configure the location.

6. You are now asked to select a program folder. Click Next to accept the default program folder or enter the folder name you prefer.

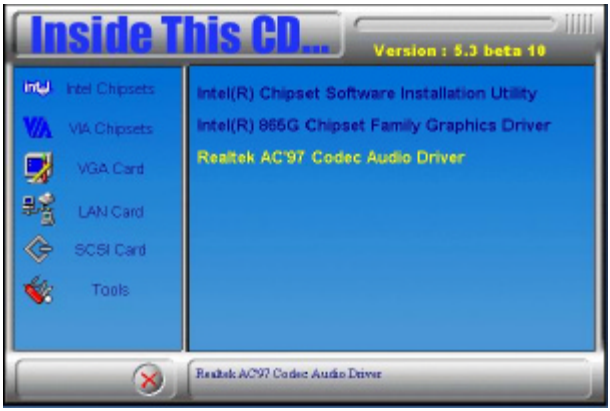
7. The InstallShield Wizard has completed installation. Click Finish for the computer to restart and changes to take effect.


Intel(R) Application Accelerator Setup
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Application Accelerator. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

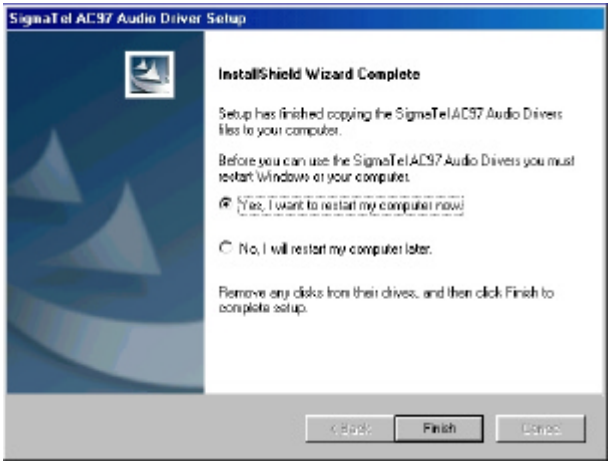
AC97 Codec Audio Driver Installation

Follow the steps below to install the AC97 Codec Audio Drivers on your system.

1. Insert the CD that comes with the board and the screen below would appear. Click Intel Chipsets, then Intel 865G Chipset Family Drivers. Click Realtek AC97 Codec Audio Drivers to start installation.



2. Click Finish to restart the computer and for changes to take effect. .


SigmaTel AC'97 Audio Driver Setup
InstallShield Wizard Complete
Setup has finished copying the SigmaTel AC97 Audio Drivers files to your computer.
Before you can use the SigmaTel AC97 Audio Drivers you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

LAN Drivers Installation

Follow the steps below to proceed with the LAN drivers installation.

1. Insert the CD that comes with the motherboard and the screen below would appear. Click Intel(R) LAN Card, then Realtek RTL8139x LAN Drivers.

2. When the Welcome screen to the driver setup appears, click Next to continue and until the driver files have been copies.

3. When the installation is complete, click Finish to end the driver installation process.

Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Reserved
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE